

AK

| Notice of Allowability | Application No. | Applicant(s) | |
|-------------------------------|---------------------------|---------------------|--|
| | 10/816,178 | JOHNSON ET AL. | |
| | Examiner Hai L. Nguyen | Art Unit 2816 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. This communication is responsive to the amendment filed 9/9/2005.
2. The allowed claim(s) is/are 1,2,4-11,13-22,24-33,35-45 and 47-55.
3. Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All
 - b) Some*
 - c) None
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

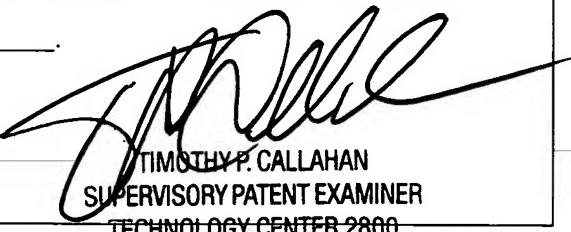
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) hereto or 2) to Paper No./Mail Date _____.
 - (b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. Notice of References Cited (PTO-892)
2. Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. Notice of Informal Patent Application (PTO-152)
6. Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. Examiner's Amendment/Comment
8. Examiner's Statement of Reasons for Allowance
9. Other _____.



TIMOTHY P. CALLAHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800
Part of Paper No./Mail Date 20050930

DETAILED ACTION

Response to Amendment

1. The amendment received on 9/9/2005 has been reviewed and considered with the following results:

As to the objection to the drawings, Applicant's revision of the drawings has overcome the objection, as such; the objection has been withdrawn.

As to the objection to claim 25, Applicant's amendment has overcome the objection, as such; the objection has been withdrawn.

As to the rejection to claim 52, under 35 U.S.C. 112, 2nd paragraph, Applicant's amendment has overcome the rejections, as such; the rejection has been withdrawn.

As to the prior art rejections to the claims, Applicant's amendment has overcome the prior art rejections, as such; the prior art rejections have been withdrawn. The case is found to be in allowance condition.

REASON FOR ALLOWANCE

2. The following is an examiner's statement of reasons for allowance: Applicant has amended the base claims to include the claim that would be allowable if rewritten in independent form as stated in the previous Office Action. As to pending claims of the application, the prior art of record fails to disclose a phase detector circuit (80 in instant Fig. 8), having specific structural limitations such as a first delay circuit (84) having an output and an input coupled to receive the first input signal (CLK_REF), the first delay circuit being operable to delay the first input signal by a first delay value and couple the delayed first input signal to the output; a second

delay circuit (90) having an output and an input coupled to receive the second input signal (CLK_FB), the second delay circuit being operable to delay the second input signal by a second delay value and couple the delayed second input signal to the output; a third delay circuit (88) having an output and an input coupled to receive the first input signal, the third delay circuit being operable to delay the first input signal by a third delay value and couple the delayed first input signal to the output; a fourth delay circuit (92) having an output and an input coupled to receive the second input signal, the fourth delay circuit being operable to delay the second input signal by a fourth delay value and couple the delayed second input signal to the output; a first flip-flop (upper 60) having a set input coupled to the output of the first delay circuit, a reset input coupled to the output of the second delay circuit, and a pair of complimentary first and second outputs; and a second flip-flop (lower 60) having a set input coupled to the output of the third delay circuit, a reset input coupled to the output of the fourth delay circuit, and a pair of complimentary first and second outputs (INCR, DECR), and being configured in combination with the rest of the limitations of the base claims and any intervening claims.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai L. Nguyen whose telephone number is 571-272-1747 and

Right Fax number is 571-273-1747. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The official fax phone number for the organization where this application or proceeding is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1562.

5. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HLN 
October 2, 2005

9/30/2005
Approved by

Replacement Sheet

1/13

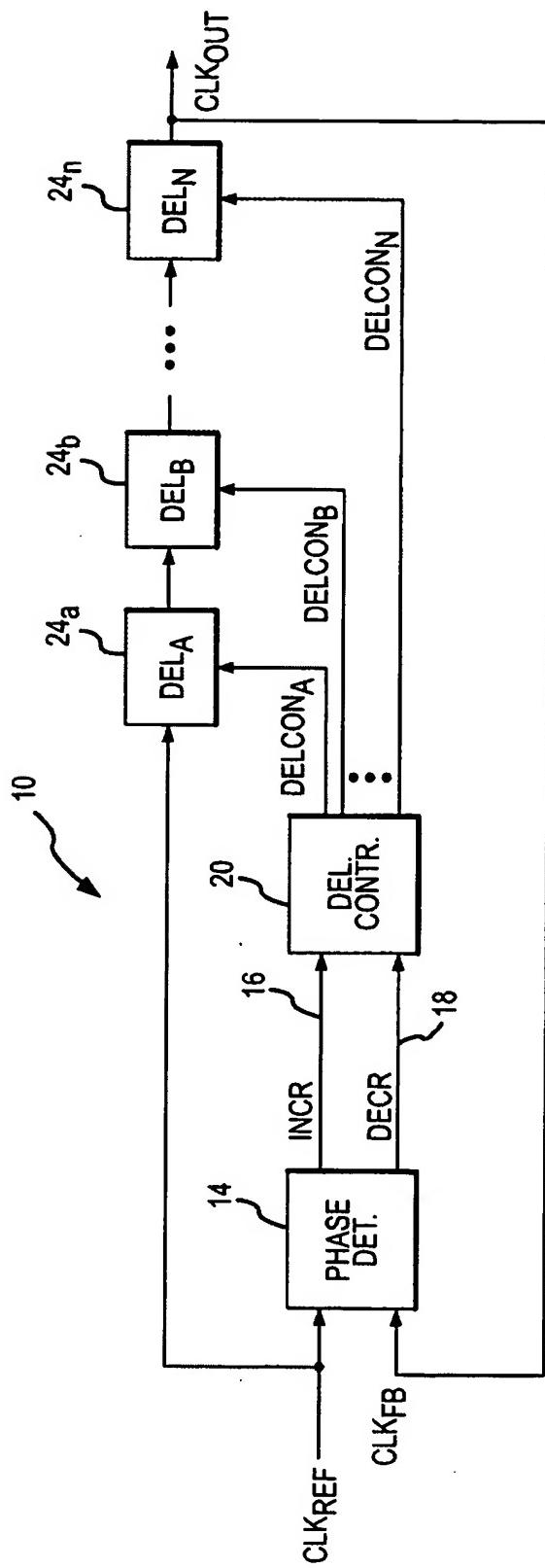


FIG. 1
(PRIOR ART)

9/80/2005
Approved HLN

Replacement Sheet

2/13

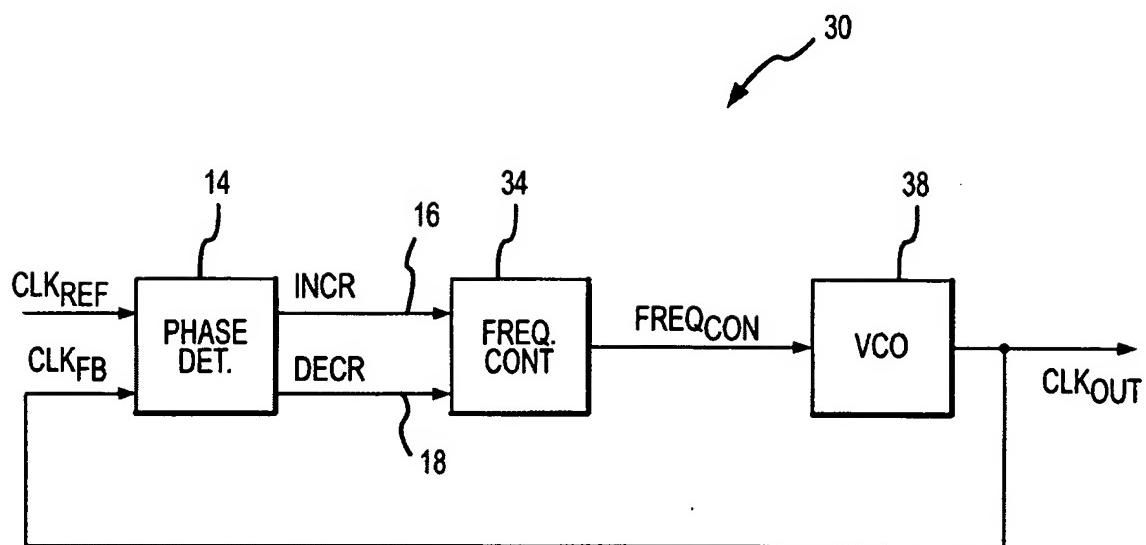
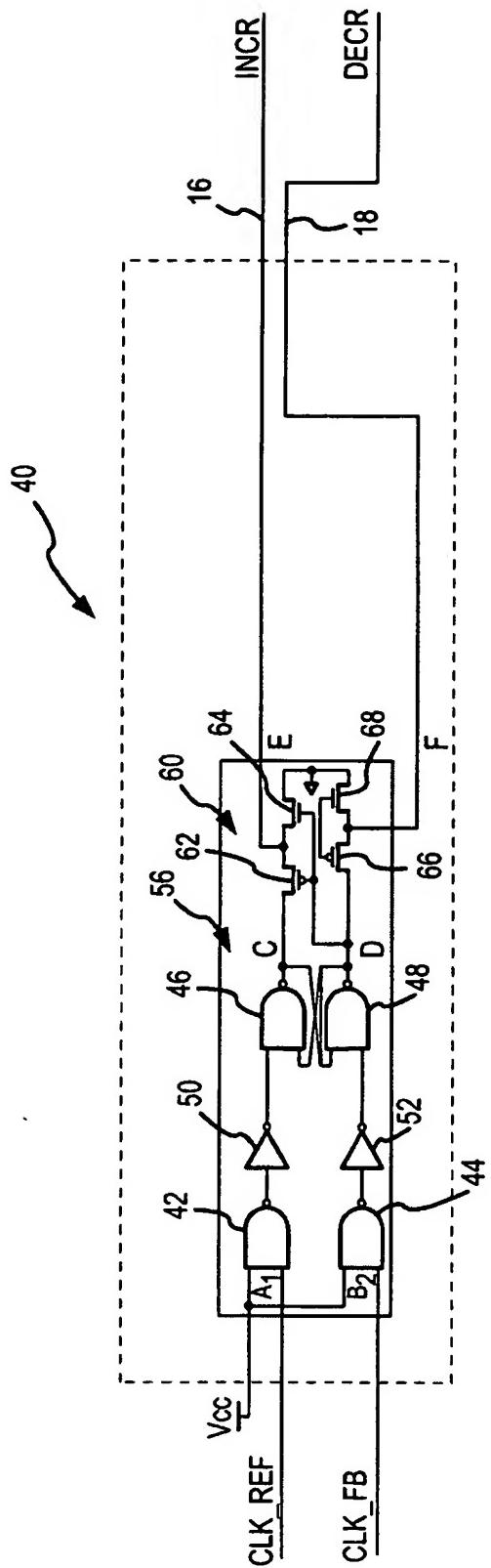


FIG.2
(PRIOR ART)

9/30/2005
Approved FCA

Replacement Sheet

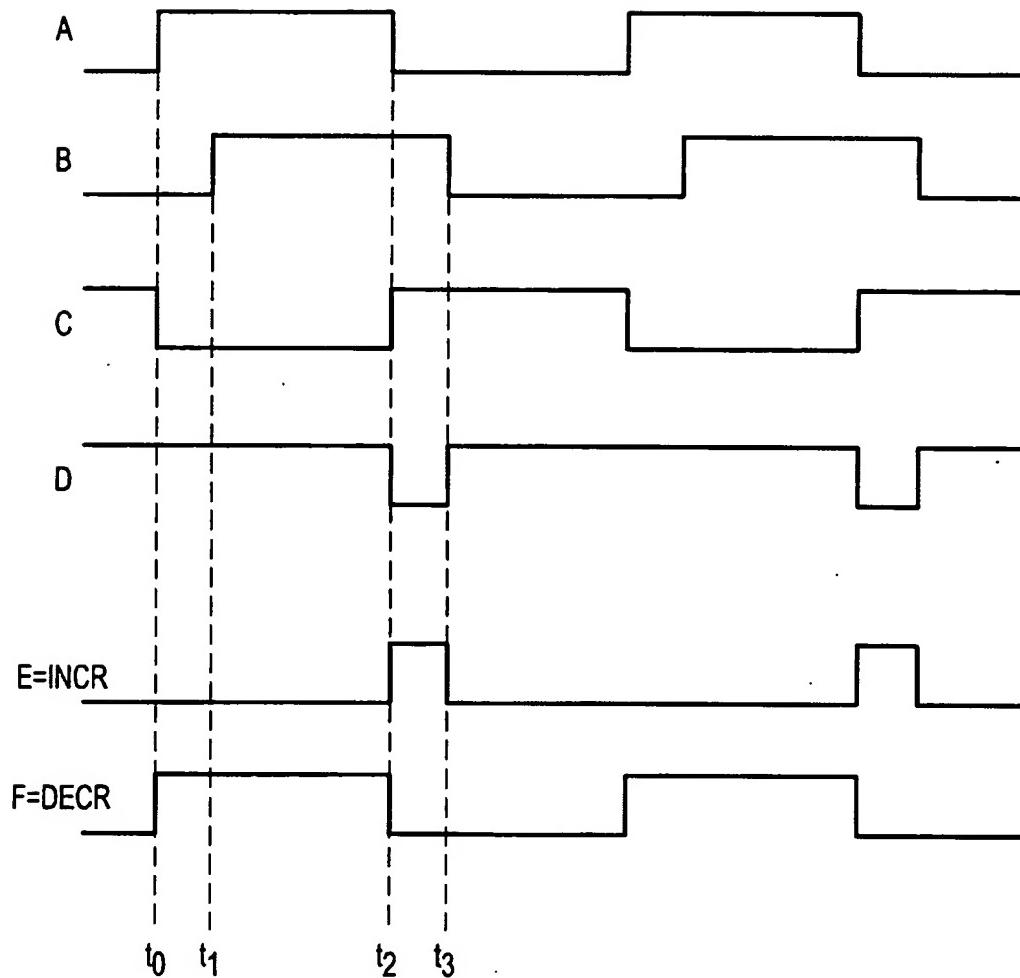
3/13



PRIOR ART
FIG.3

9/30/2005
Approved REN Replacement Sheet]

4/13



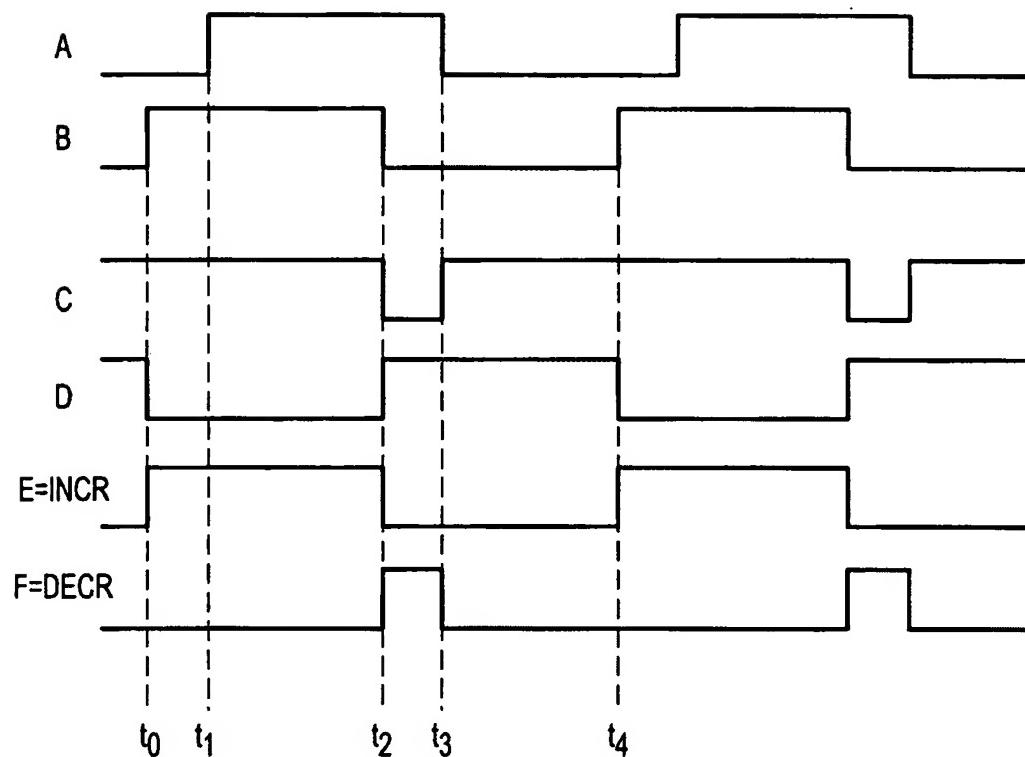
PRIOR ART

FIG.4

9/8/2005
Approved HCN

Replacement Sheet

5/13



PRIOR ART

FIG.5

9/20/05
Approved by

Replacement Sheet

6/13

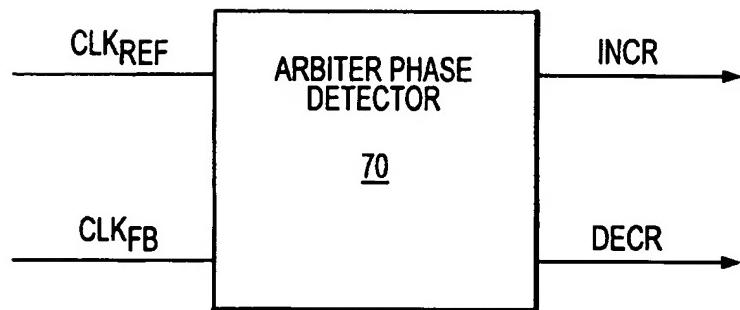


FIG.6

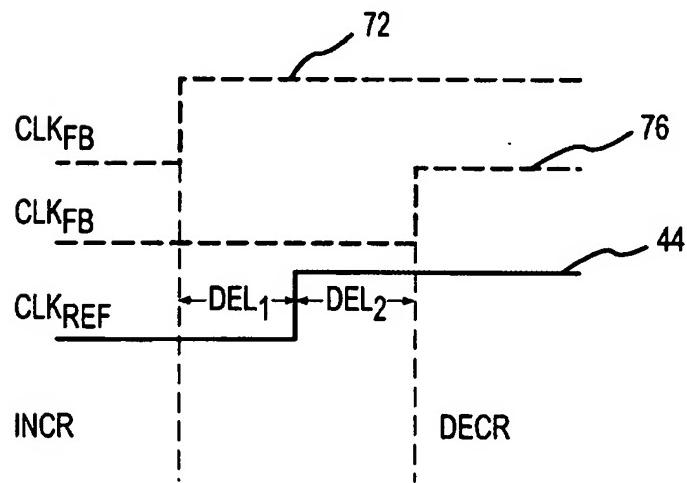


FIG.7

9/30/2005

Approved

Replacement Sheet

7/13

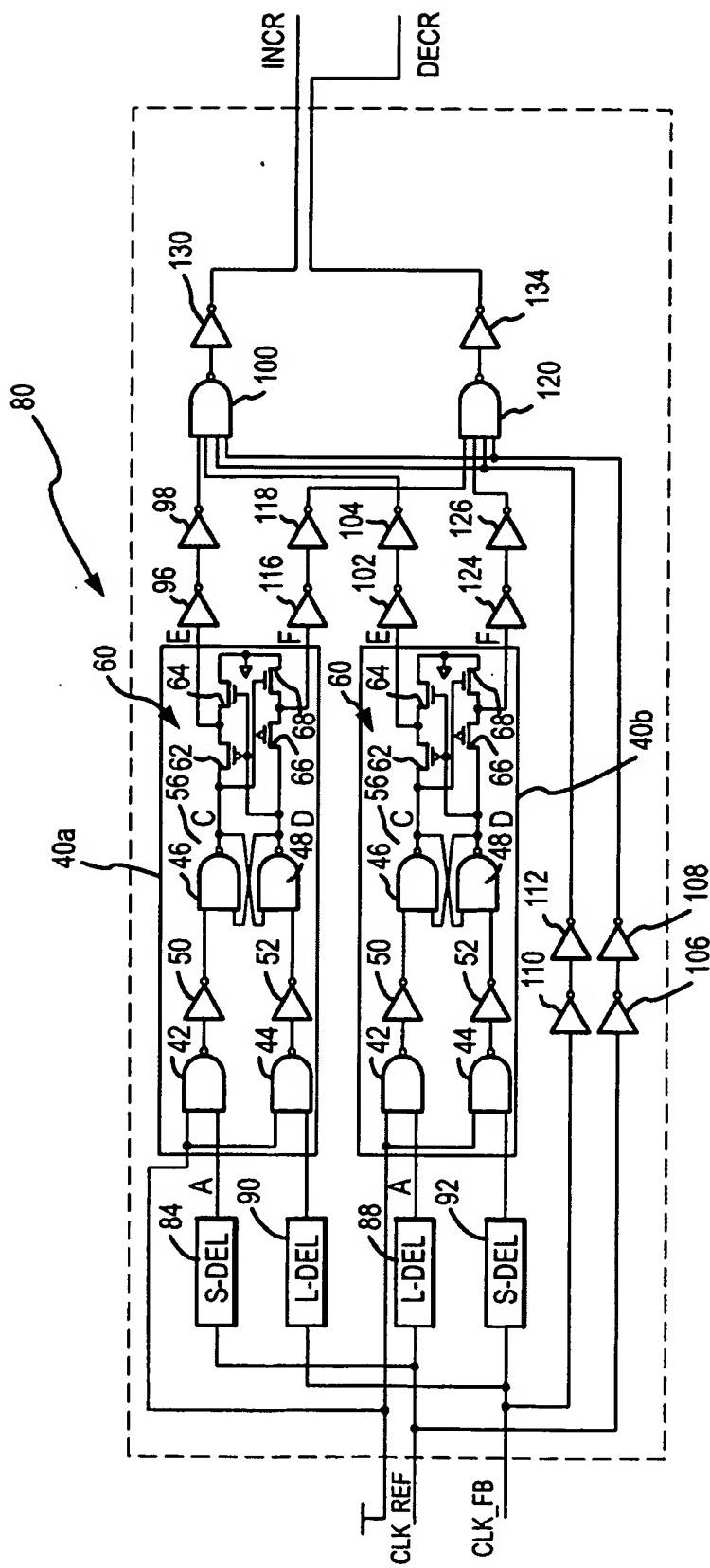


FIG. 8

9/30/2005
Approved by [Signature]

Replacement Sheet

8/13

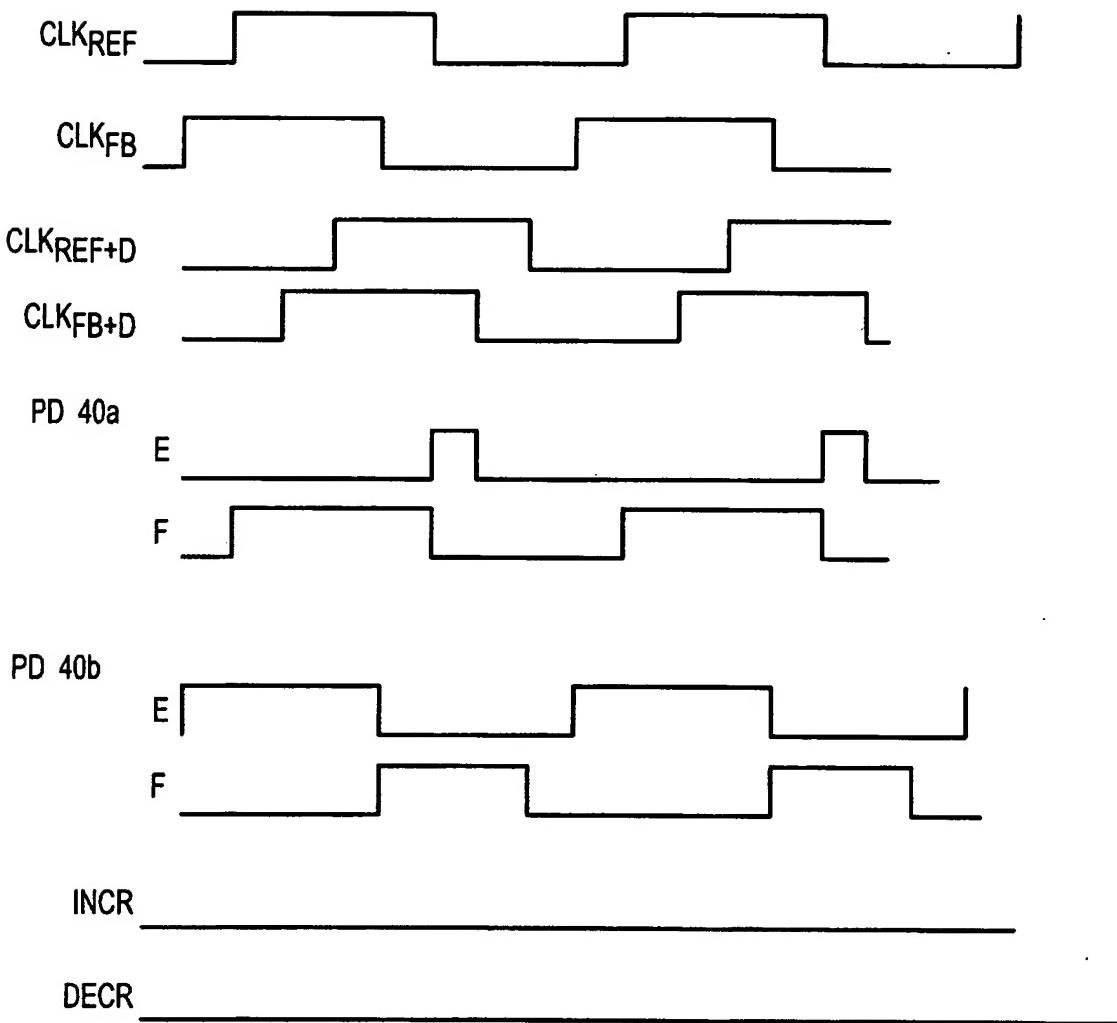


FIG.9

9/8/2005
Approved *[Signature]* Replacement Sheet

9/13

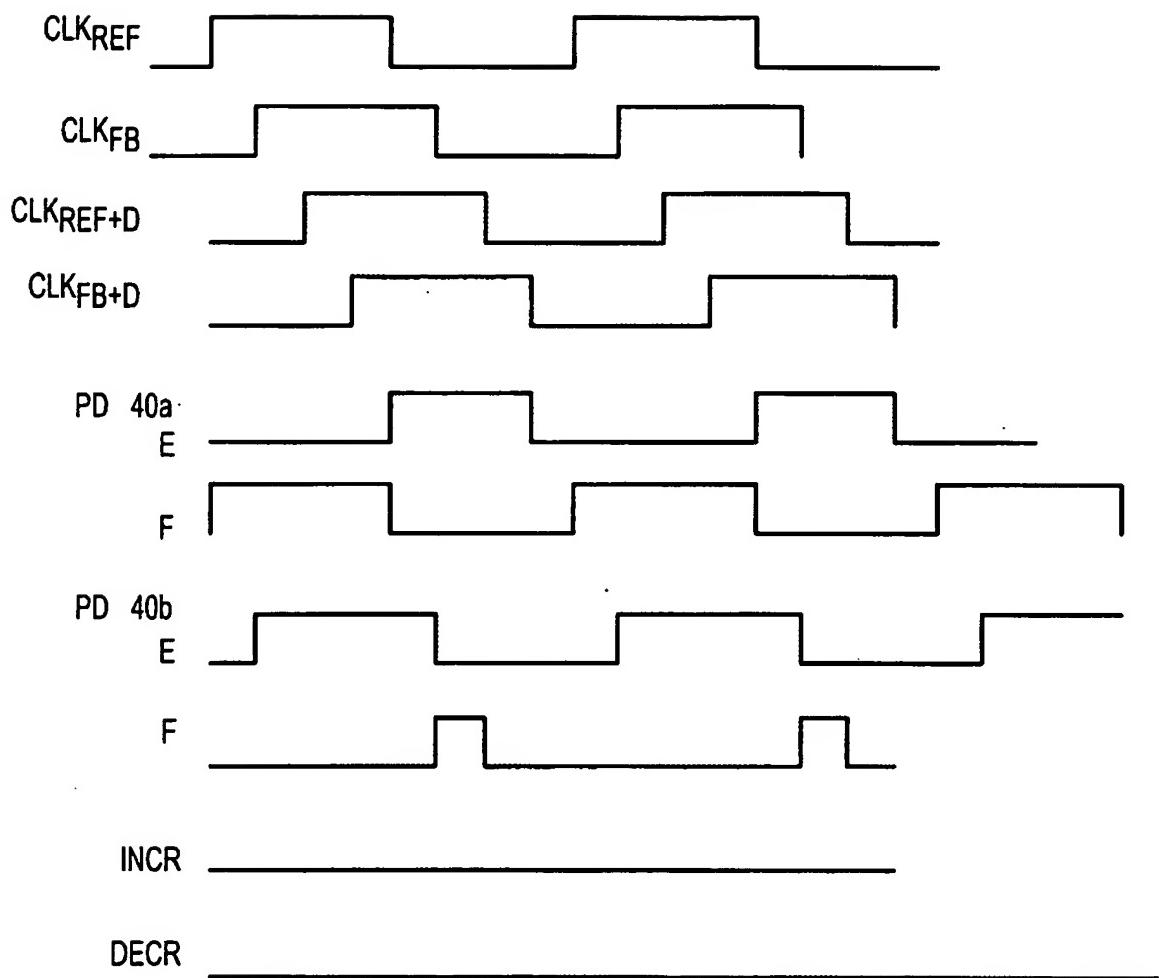


FIG.10

9/8/2005 Approved by
Replacement Sheet

10/13

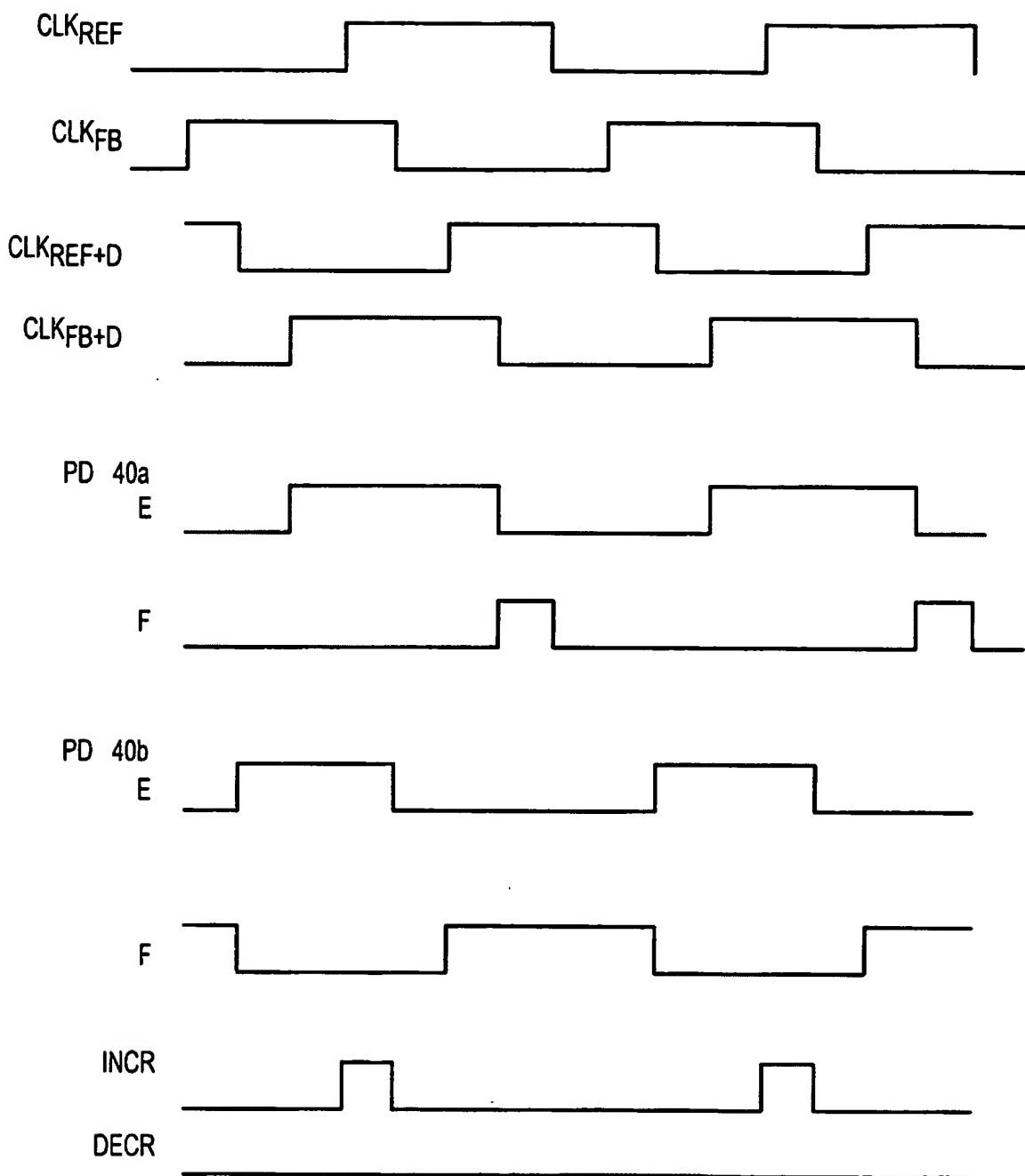


FIG.11

930005
Approved
Replacement Sheet

11/13

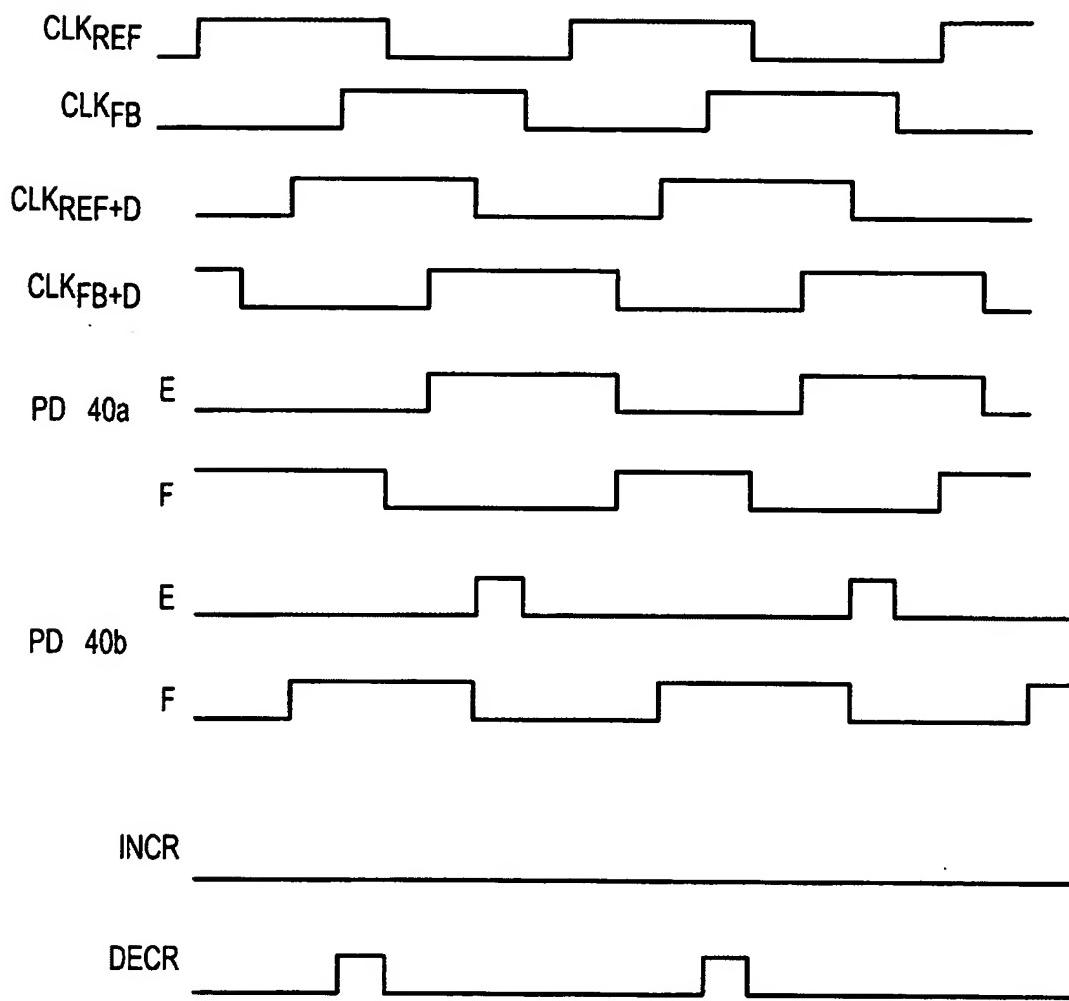


FIG.12

9/20/2005
Approved

Replacement Sheet

12/13

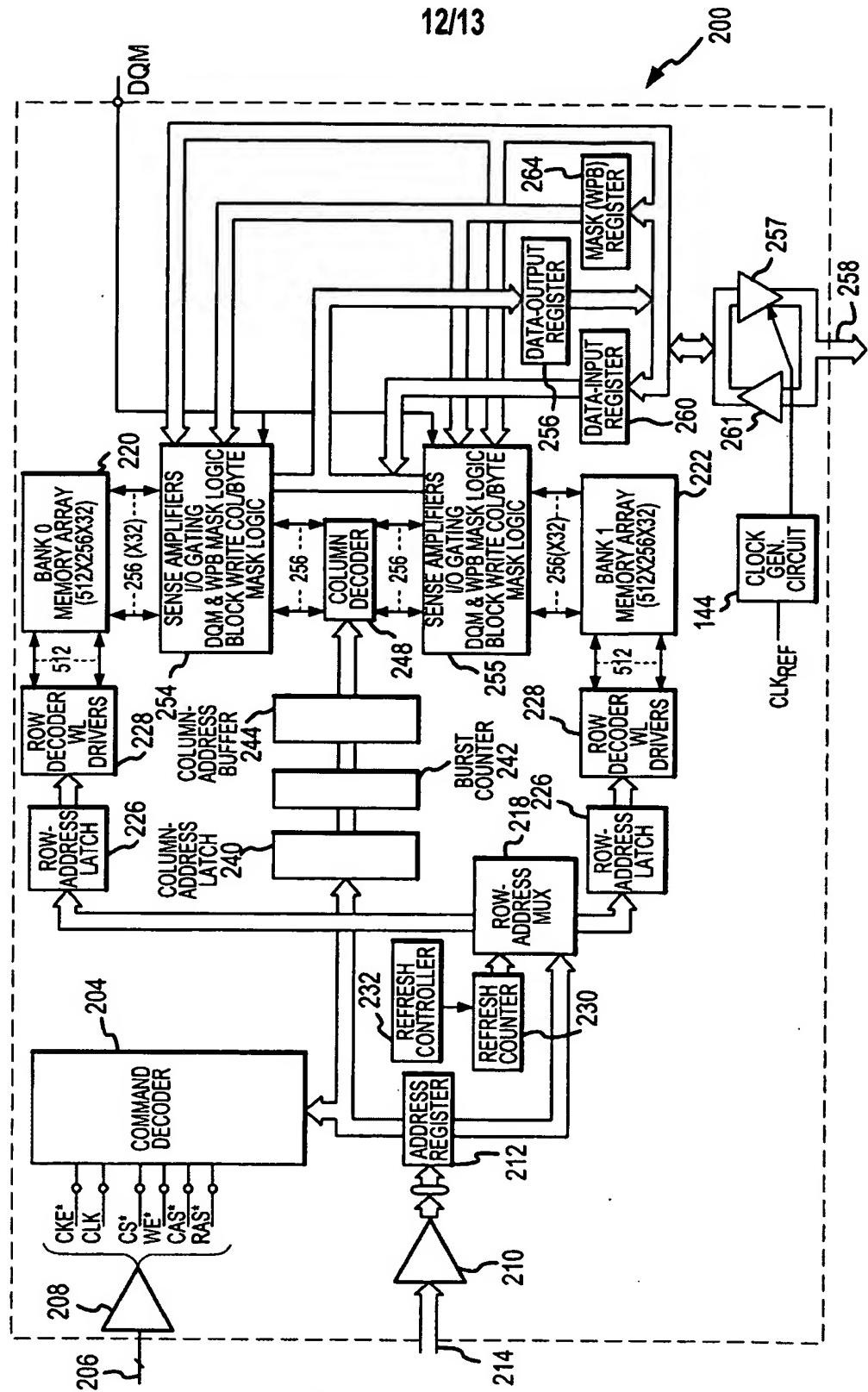


FIG.13

980205
Approved HN
Replacement Sheet

13/13

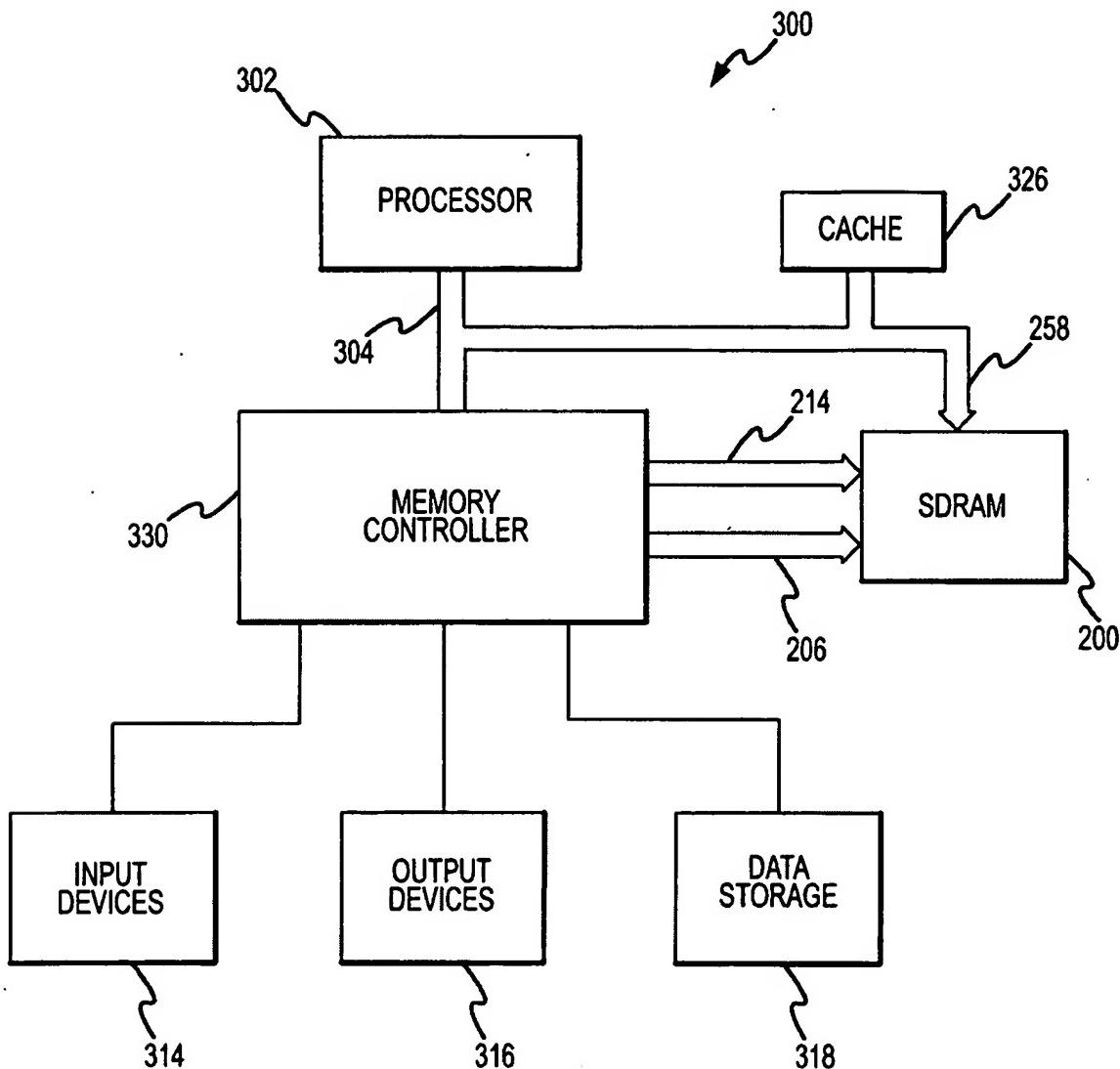


FIG.14